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Food habits and soil temperature tolerance range of *Aneuretus simoni* Emery (Sri Lankan Relict Ant) and its behavioural interactions with three insect species

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Aneuretus simoni is a critically endangered endemic ant species in Sri Lanka. Five preliminary laboratory experiments were conducted in May 2010 at room temperature to study several biological aspects of workers of this species that were collected from the Kirikanda forest in the Kalutara district. Five major and minor workers of *A. simoni* were introduced separately to the cavities which consisted of decaying plant material and small dead insects collected from the same forest, and honey. After an hour, all ants observed on each food source in each setup were recorded. Three trials were conducted for each food source. Soil temperature tolerance range of *A. simoni* at 40 % of soil humidity and soil pH of 6 was investigated by exposing nine major and minor workers each to twelve temperatures, ranging from 19 - 35 °C, for an hour. Each experimental setup consisted of three 50 ml beakers containing 5 g of soil collected from the Kirikanda forest. Three *A. simoni* workers were introduced to each 50 ml beaker. These beakers were placed in a water bath to maintain the soil temperature. A control setup was also maintained at room temperature. The soil temperature tolerance ranged from 23 – 32 °C while no mortality was recorded in the control.

To study the behavioural interactions between *A. simoni* and two other ant species (*Pheidole* sp. 10 in author's collection and *Odontomachus simillimus)* and a termite species (*Nasutitermes ceylonicus)*, which were common in the Kirikanda forest, a piece of rigifoam with two cavities of 7 cm diameter and a connecting middle canal, was used. Initially, the canal was blocked and ten major and minor workers of *A. simoni* were placed in one cavity and ten soldiers and workers of the other species were placed in the other cavity. After half an hour, the piece of rigifoam which blocked the canal was removed. Observations from three trials conducted with each species were recorded. *Pheidole* sp. 10 and *N. ceylonicus* avoided *A. simoni* workers while *O. simillimus* killed three, three and two *A. simoni* workers in the three trials, respectively. It can be concluded that *A. simoni* workers were omnivorous similar to the field observations of other researchers. Workers of *A. simoni* were eurythermal at 40% of soil humidity and soil pH of 6. *Aneuretus simoni* can mutually survive with *Pheidole* sp. 10 and *N. ceylonicus*, but *O. simillimus* appeared to be a natural enemy of this species.

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